

Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 0000054628	FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. PCT/EP2004/006160	International filing date (day/month/year) 08.06.2004	Priority date (day/month/year) 12.06.2003
International Patent Classification (IPC) or national classification and IPC		
Applicant BASF AKTIENGESELLSCHAFT		

- This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
- This REPORT consists of a total of 5 sheets, including this cover sheet.
- This report is also accompanied by ANNEXES, comprising:
 - ☒ (sent to the applicant and to the International Bureau) a total of 2 sheets, as follows:
 - ☒ sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
 - ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
 - ☐ (sent to the International Bureau only) a total of _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).
- This report contains indications relating to the following items:

<input checked="" type="checkbox"/>	Box No. I	Basis of the report
<input type="checkbox"/>	Box No. II	Priority
<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
<input type="checkbox"/>	Box No. IV	Lack of unity of invention
<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
<input type="checkbox"/>	Box No. VI	Certain documents cited
<input type="checkbox"/>	Box No. VII	Certain defects in the international application
<input type="checkbox"/>	Box No. VIII	Certain observations on the international application

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

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Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language _____ which is the language of a translation furnished for the purposes of:
- ☐ international search (Rule 12.3 and 23.1(b))
- ☐ publication of the international application (Rule 12.4)
- ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 1-10 _____ as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☒ the claims:
- nos. _____ as originally filed/furnished
- nos.* _____ as amended (together with any statement) under Article 19
- nos.* 1-9 _____ received by this Authority on /filed with the demand
- nos.* _____ received by this Authority on _____
- ☒ the drawings:
- sheets 1/3-3/3 _____ as originally filed/furnished
- sheets* _____ received by this Authority on _____
- sheets* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages _____
- ☐ the claims, nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (specify): _____
- ☐ any table(s) related to sequence listing (specify): _____
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages _____
- ☐ the claims, nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (specify): _____
- ☐ any table(s) related to sequence listing (specify): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

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Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
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1. Statement

Novelty (N)	Claims <u>1-9</u>	YES
	Claims _____	NO
Inventive step (IS)	Claims <u>1-9</u>	YES
	Claims _____	NO
Industrial applicability (IA)	Claims <u>1-9</u>	YES
	Claims _____	NO

2. Citations and explanations (Rule 70.7)

Reference is made to the following documents:

D1: JP 10-109952
D2: US-A-3878058
D3: WPI AN 1991-351559

Novelty

D1 discloses a method, which corresponds to the method according to claim 1 of the present application, for the distillative separation of a mixture containing cyclohexyl vinyl ether and cyclohexanol. Since the method according to claim 1 of the present application concerns the separation of mixtures containing C₂- to C₄-alkyl vinyl ether and C₂- to C₄ alcohol, the subject matter of claim 1 is novel over D1.

D2 discloses a method for separating a mixture containing C₁- to C₈-alkyl vinyl ether and an aliphatic alcohol by extractive distillation using a glycol monoether.

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D3 describes the separation of a mixture containing butanol and butyl vinyl ether by extractive distillation using water.

The subject matter of claim 1 of the present application is therefore novel over D2 and D3.

Inventive step

Document D2 is considered the prior art closest to the subject matter of claim 1. The present invention is considered to address the problem of developing a simpler method for separating a mixture containing C₂ to C₄-alkyl vinyl ether and C₂- to C₄-alkanol without using an auxiliary agent.

The solution to this problem as proposed in claim 1 of the present application involves an inventive step (PCT Article 33(3)) for the following reasons:

There is nothing in D1 to indicate that the method described therein for separating vinyl ether/alcohol mixtures can be used for anything other than cyclohexyl vinyl ether/cyclohexanol mixtures. It was also not expected that mixtures of C₂- to C₄-alkyl vinyl ether and alkanol can be separated using a method such as that described in D1.

Claims 2-9 are dependent on claim 1 and therefore likewise meet the PCT requirements for novelty and

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inventive step.